

In the claims:

1-3. (Cancelled)

4. (Currently amended) The inhaleable powder composition of claim 39
wherein the microstructures are porous and wherein the microstructures have comprising a mean porosity of 0.5 – 80%.

5. (Currently amended) The inhaleable powder composition of claim 4
wherein the microstructures have comprise a porosity of 2-40%.

6. (Currently amended) The inhaleable powder composition of claim 39 §
wherein the microstructures are porous and wherein the further comprising a mean pore size is of 20 – 200 nm.

7. (Currently amended) The inhaleable powder composition of claim 6.
wherein the further comprising a mean pore size is of 50 – 100 nm.

8. (Currently amended) The inhaleable powder composition of claim 39
wherein the powder composition has further comprising a fine particle fraction of greater than 20% w/w.

9. (Currently amended) The inhaleable powder composition of claim 8
wherein the powder composition has further comprising a fine particle fraction from about 30%
to 70% within 30-70% w/w.

10. (Currently amended) The inhaleable powder composition of claim 39
wherein the bulk density is less than 0.1 g/cm³.

11. (Currently amended) The inhaleable powder composition of claim 39
wherein the bulk density is less than 0.05 g/cm³.

12. (Currently amended) The inhaleable powder composition of claim 39
wherein said particulate microstructures comprises hollow porous microspheres.

13. (Currently amended) The inhaleable powder composition microspheres of claim 12 wherein the microspheres have further comprising a shell thickness between 0.1– 0.5 μm .

14. (Currently amended) The inhaleable powder composition of claim 39 wherein the mean aerodynamic diameter of said particulate microstructures is between 0.5 μm and 5 μm .

15. (Currently amended) The inhaleable powder composition of claim 14 wherein said particulate microstructures have a mean geometric diameter of less than about 5 μm .

16-17. (Cancelled)

18. (Currently amended) The inhaleable powder composition of claim 39 wherein said phospholipid is selected from the group consisting of dilauroylphosphatidylcholine, dioleylphosphatidylcholine, dipalmitoylphosphatidylcholine, disteroylphosphatidylcholine dibehenoylphosphatidylcholine, diarachidoylphosphatidylcholine and combinations thereof.

19. (Currently amended) The inhaleable powder composition of claim 18 wherein said phospholipid has comprises a gel to liquid crystal transition temperature of greater than 40° C.

20. (Currently amended) The inhaleable powder composition of claim 39 wherein said active agent is a bioactive agent.

21. (Currently amended) The inhaleable powder composition of claim 20 wherein said bioactive agent is selected from the group consisting of antiallergics, bronchodilators, pulmonary lung surfactants, analgesics, antibiotics, antiinfectives, leukotriene inhibitors or antagonists, antihistamines, antiinflammatories, antineoplastics, anticholinergics, anesthetics, anti-tuberculars, antivirals, fungicides, immunoactive agents, vaccines, immunosuppressive agents, imaging agents, cardiovascular agents, enzymes, steroids, DNA, RNA, viral vectors, antisense agents, proteins, peptides and combinations thereof.

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22. (Currently amended) The inhaleable powder composition of claim 20 wherein the bioactive agent is selected from the group consisting of fentanyl, morphine, lung surfactant, leuprolide, interferon, insulin, budesonide, formoterol, goserelin, and growth hormones.

23. (Currently amended) The inhaleable A-powder composition of claim 39 wherein said particulate microstructure comprises a perforated microstructure.

24-38. (Cancelled)

39. (Currently Amended) An inhaleable A powder composition comprising a plurality of particulate microstructures, said microstructures comprising a structural matrix comprising an active agent, calcium and a zwitterionic-phospholipid, wherein said microstructures have a mean comprise a geometric diameter of 1-30 microns, a mean an aerodynamic diameter of less than 5 microns, and a bulk density of less than about 0.5 g/cm³.

40. (Currently amended) An inhaleable A-powder composition comprising a plurality of particulate microstructures, said microstructures comprising a structural matrix comprising calcium, an active agent and a zwitterionic-phospholipid, wherein said phospholipid comprises a gel to liquid crystal transition temperature of greater than 40° C.

41. (Currently amended) The inhaleable powder composition of claim 40 wherein said microstructures have a mean comprise a geometric diameter of 1-30 microns, a mean an aerodynamic diameter of less than 5 microns, and a bulk density of less than about 0.5 g/cm³.

42. (Currently amended) The inhaleable powder composition of claim 41 wherein the mean geometric diameter is less than 10 microns.

43. (Currently amended) The inhaleable powder composition of claim 42 wherein the further comprising an active agent is a bioactive agent.

44. (Currently amended) The inhaleable powder composition of claim 42 wherein the mean geometric diameter is less than 5 microns.

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45. (Currently amended) The inhaleable powder composition of claim 42-43 or claim 44 wherein the bulk density is less than 0.1 g/cm³.

46. (Currently amended) The inhaleable powder composition of claim 45 wherein the bulk density is less than 0.05 g/cm³.

47. (Currently amended) The inhaleable powder composition of claim 40 wherein said phospholipid is selected from the group consisting of dilauroylphosphatidylcholine, dioleylphosphatidylcholine, dipalmitoylphosphatidylcholine, distearylphosphatidylcholine, dibehenoylphosphatidylcholine, diarachidoylphosphatidylcholine and combinations thereof.

48. (Cancelled)

49. (Currently amended) The inhaleable powder composition of claim 43 wherein said active agent is a bioactive agent is selected from the group consisting of antiallergics, bronchodilators, pulmonary lung surfactants, analgesics, antibiotics, antiinfectives, leukotriene inhibitors or antagonists, antihistamines, antiinflammatories, antineoplastics, anticholinergics, anesthetics, anti-tuberculars, antivirals, fungicides, immunoactive agents, vaccines, immunosuppressive agents, imaging agents, cardiovascular agents, enzymes, steroids, DNA, RNA, viral vectors, antisense agents, proteins, peptides and combinations thereof.

50. (Currently amended) The inhaleable powder composition of claim 43-49 wherein the bioactive agent is selected from the group consisting of fentanyl, morphine, lung surfactant, leuprolide, interferon, insulin, budesonide, formoterol, goserelin, and growth hormones.

51. (Currently amended) The inhaleable powder composition of claim 43-49 wherein the bioactive agent is an aminoglycoside antibiotic.

52. (New) The inhaleable powder composition of claim 20 wherein the bioactive agent is an aminoglycoside antibiotic.

53. (N w) The inbaleable powder composition of claim 20 wherein the bioactive agent is a fungicide.

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54. (New) The inhaleable powder composition of claim 43 wherein the bioactive agent is a fungicide.

55. (New) The inhaleable powder composition of claim 39 wherein the phospholipid comprises a zwitterionic phospholipid.

56. (New) The inhaleable powder composition of claim 40 wherein the phospholipid comprises a zwitterionic phospholipid.

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